

PETALUMA POULTRY PROCESSORS, INC.

P.O. Box 7368 • 2700 Lakeville Highway • Petaluma, CA 94955-7368
Phone (707) 763-1904 • Fax (707) 763-3924

October 20, 1999

Toni Strother
Room 2510, South Building
USDA, AMS, NOP
P.O. Box 96456
Washington, D.C. 20090-6456

Phone No. (202) 720-3252
Fax No. (202) 205-7808

Dear Ms. Strother,

As long time practitioners of natural raising practices for all of our chickens, we are asking that the NOSB include the supplemental amino acids (methionine, lysine, and threonine) in their recommendations for inclusion on the NATIONAL LIST OF PERMITTED MATERIALS FOR USE IN PRODUCTION OF ORGANIC LIVESTOCK. This support is based on the following critical points:

1. Insufficient levels of amino acids can harm the livestock and endanger their health and well being.
2. Excessive levels of amino acids cause deleterious environmental impacts
3. It is not feasible to achieve proper levels of amino acids for a nutritionally balanced ration without supplemental amino acids

Insufficient levels of amino acids can harm the livestock and endanger their health and well being.

All classes and ages of livestock have requirements for amino acids to ensure that they develop in an efficient and healthy manner. Amino acids are essential to the growth and well being of livestock and humans. A lack of a particular amino acid, even though all others are present in the proper amount, can cause poor growth and health in the livestock.

For example, in poultry, one of the critical amino acids is methionine. If the bird does not have a sufficient quantity of methionine in its diet, it will grow at a slower rate. In addition to slower growth, feathers will not grow properly to cover the body and prevent heat loss. Finally, insufficient methionine in the bird, will prevent the immune system from developing properly, leaving the bird especially susceptible to diseases.

(1)

Lysine is also a critical amino acid in poultry nutrition. Lysine is essential for proper muscle development, and must be provided in sufficient quantities to maintain the basic health of the bird.

Excessive levels of amino acids cause deleterious environmental impacts

It is well documented that excessive levels of amino acids (protein) lead to excessive releases of nitrogen into the environment. To understand this relationship between amino acids and the environment, we must first address the impact of excessive amino acid levels on the bird's digestive system.

When practical corn and soybean meal feed rations are produced without using supplemental amino acids, they typically contain excess amino acids. In this situation, an excess of protein also leads to poorer utilization of the other amino acids in the ration. As the protein goes higher, the utilization of the other amino acids decreases.

A paper by Dr. Michael Pack (1995) indicates that a normal digestibility of methionine in a proper balanced ration is about 91%. If the total protein content is increased, the methionine content will also increase. Pack noted that increases to the total protein content could reduce the digestibility of the methionine down to 62%.

When this occurs, the excess amino acids are used as energy sources and the nitrogen is excreted in the feces of poultry. These nitrogen compounds in the feces are in turn broken down into ammonia in the fecal matter. When the birds are maintained in confinement, this ammonia causes health problems when concentrated above certain levels. Ultimately, the majority of this ammonia is released into the atmosphere.

Under range conditions, the ammonia is typically released directly into the atmosphere. Dutch researchers have studied nitrogen emissions in poultry extensively. They have concluded that even more nitrogen is released to the atmosphere under range and deep litter systems (which would be used as an alternative in organic production during inclement weather) than in certain confinement systems.

For every bird raised there will be nitrogen released to the atmosphere regardless of rearing conditions. The use of supplemental amino acids will reduce the amount of nitrogen released to the atmosphere.

In previous testimony to NOSB in Sacramento, we presented examples of corn and soybean rations formulated with and without synthetic dl methionine. To supply the proper amount of methionine required for optimum production without using synthetic dl methionine, an additional of 192 pounds of protein per ton of feed or 30.7 pounds of nitrogen per ton of feed must be added to the ration. In this scenario, a hen will excrete an additional 1.7 grams of nitrogen per day. Studies conducted by Summer (1993) show that it is possible to reduce fecal nitrogen by 12% when protein is reduced from 19% to

15% in laying rations. The actual amount will in all likelihood be greater than presented, because of the effect of excess protein on the digestibility of the amino acids.

It is not feasible to achieve proper levels of amino acids without supplemental amino acids

The goal of the animal nutritionist is to supply nutrients to match the metabolic requirements of the animal. In this regard, amino acids are one item that must be considered. Organic poultry rations usually consist of organically grown corn and soybeans, calcium and phosphorus sources, trace minerals and vitamins. These need to be supplied in the correct amounts for normal growth.

Feed rations that only use corn as the grain and soybean meal as the protein source simply cannot be formulated to supply the amino acid requirements of the animal in proper balance. When the amount of soybean meal is increased, and the amount of corn is decreased, protein content is increased. However, methionine does not increase proportionately. Moreover, the excess of the other amino acids cause an increased need for methionine due to protein metabolism changes in the animal. The previously referenced article by Pack (1995) discusses this in greater detail. The use of synthetic dl methionine allows a proper balance of the amino acids in the diet to the animal's requirement.

When we started raising trials with organic broilers in 1989, we looked at other ingredients that contain more methionine than corn and soybeans. Fishmeal was considered, but our experience handling this product and its undesired effect on meat flavor caused us to eliminate it from the diet. The impact of undesirable meat flavors should not be underestimated. Poultry meat takes on the flavor of the feed that the bird consumes, and products such as fishmeal in the diet render the final poultry meat unpalatable.

Animal byproducts were also considered, but organic sources were not available. With overwhelming evidence concerning the link between BSE (Bovine Spongiform Encephalopathy or "Mad Cow Disease") in livestock and Creutzfeldt-Jakob disease in humans, using animal byproducts is out of the question.

Milk byproducts, alternative grains (millet and rice) were considered. There are problems with availability, growth inhibitor factors or energy content that make it difficult to produce rations that are properly balanced using these ingredients alone.

Conclusion

Without supplemental amino acids it will be difficult to properly balance the amino acid profile of feeds to the needs of the animal for growth at an optimum level, proper development of muscles and feathers for protection, and development of healthy immune system to ward off disease. We are also concerned that inefficient, improperly balanced

rations will produce excessive nitrogen, which will require more land resources to produce our end product.

While it is possible to produce rations on a theoretical basis that come close to matching the amino acid requirements with those supplied by the ration, we have experimented extensively and found that alternative rations are simply not feasible.

We believe that the amino acids should be considered individually and not as a class. Further, we support the use of amino acids only for their use as supplements in feed rations to livestock, not for use as growth promotants or enhancers. Finally, while these same amino acids are also used in food processing, we do not believe that those issues pertain to animal nutrition.

In the attachments you will find discussions on:

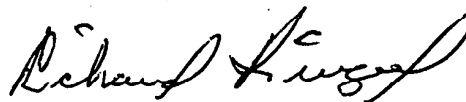
1. The documents presented in Sacramento concerning ration formulations, discussions on the affect of amino acid deficiencies.
2. A paper by John Summers from the University of Guelph on the effect of supplemental amino acids on reducing nitrogen excretion.
3. A paper by C.F.M. de Lange on the efforts in Holland to reduce environmental pollution by formulation of properly balanced diets.
4. An article on Environmental consequences of Intensive Farming in Holland. The section entitled "Ammonia" has an interesting observation on the effect of free range and deep litter floor poultry on ammonia emissions.
5. Excess Protein Can Depress Amino Acid Utilization, Pack (1995)
6. Nutrition and Immunity by Dr. Mark Cook.

Should you have any questions, please feel free to call either one of us. Thank you for your consideration of our position.

Sincerely,



Allen B. Shainsky



Richard Krengel